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Div. 6-9

PATENT SPECIFICATION

430,601



Application Date: April 21, 1934. No. 12043/34.

Complete Specification Left: April 18, 1935.

Complete Specification Accepted: June 21, 1935.

PROVISIONAL SPECIFICATION

Improvements in Counter-screw Pumps

We, DRYSDALE & COMPANY, LIMITED, of Bon-Accord Works, Ferry Road, Yoker, Glasgow, a British Company, and WILLIAM DRYSDALE, of the same address, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in counter-screw pumps of the type including a pump casing accommodating four rotatable screw elements carried by two parallelly-spaced shafts geared together for rotation in opposite directions, two screw elements being mounted on each shaft, and each screw element being arranged in intermeshing relation with the corresponding screw element on the other shaft, the arrangement being such that liquid entering the casing at the outer ends of the screw elements is pumped along said screw elements into a discharge chamber positioned centrally of the set of screw elements.

In most usual constructions the screw elements operate within a double barrel integral with the pump casing.

The present invention provides an improved counter-screw pump construction incorporating a cylindrical outer pump casing within which is detachably fitted a renewable barrel accommodating the

screw elements, the arrangement affording a simple and easily machinable structure, facilitating inspection and repair.

The outer casing is preferably split axially with flanged joints and is fitted with bolted-on end covers incorporating stuffing-boxes for the shafts which are journaled in outboard bearings carried by brackets unitary with the end covers.

The ends of the barrel are open to the interior of the casing which is provided with an inlet branch.

The barrel, of usual spectacle form in cross section, is supported within the casing on two cylindrical flanges unitary with and surrounding the barrel and defining between them a discharge chamber located centrally of the set of screw elements and communicating with a discharge branch on the casing.

The cylindrical flanges are seated in machined cylindrical surfaces on the interior of the casing.

The shafts are geared together at one end of the pump by means of timing gears enclosed in a housing attached to the adjacent bearing bracket.

Dated the 20th day of April, 1934.

R. M. NEILSON,
98, West George Street, Glasgow, C.2,
Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in Counter-screw Pumps

We, DRYSDALE & COMPANY, LIMITED, of Bon-Accord Works, Ferry Road, Yoker, Glasgow, a British Company, and WILLIAM DRYSDALE, of the same address, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in counter-screw pumps of the type including a pump casing accommodating four rotatable screw elements carried by two spaced parallel shafts geared together for rotation in opposite directions, two screw elements being mounted on each

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shaft, and each screw element being arranged in intermeshing relation with the corresponding screw element on the other shaft, the arrangement being such that liquid entering the casing at the outer ends of the screw elements is pumped along said screw elements into a discharge chamber positioned centrally of the set of screw elements.

In most usual constructions the screw elements operate within a double barrel integral with the pump casing.

The present invention consists in a counter-screw pump of the type above referred to incorporating an outer pump casing, and a renewable open-ended

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Double barrel detachably fitted within said casing and accommodating the screw elements, the arrangement affording a simple and easily machinable structure, facilitating inspection and repair.

The ends of the barrel, which is of the usual spectacle form in cross-section, are open to the interior of the casing.

The barrel is supported within the casing on two cylindrical flanges unitary with and surrounding the barrel and defining between them a discharge chamber located centrally of the set of screw elements and communicating with the casing discharge branch. These cylindrical flanges engage machined cylindrical surfaces on the interior of the casing.

The outer casing is preferably split axially with flanged joints and is fitted with bolted-on end covers incorporating stuffing boxes for the shafts which are journaled in outboard bearings carried by brackets unitary with the end covers.

The shafts are geared together at one end of the pump by means of timing gears enclosed in a housing attached to the adjacent bearing bracket.

In the accompanying drawings Fig. 1 is a vertical section, Fig. 2 a transverse section on the line *a-a* of Fig. 1, and Fig. 3 a plan, of a counter-screw pump according to the invention.

The pump illustrated incorporates a cylindrical outer casing 1 within which is detachably fitted a renewable open-ended barrel 2, of the usual spectacle form in cross-section, accommodating four screw elements only two of which are shown at 3, 3 and which are mounted two on each shaft of a pair of shafts 4, 5.

The barrel 2 is supported within the casing 1 on two cylindrical flanges 6, 7, unitary with and surrounding the barrel 2 and defining between them a discharge chamber 8 located centrally of the set of screw elements 3 and communicating with

a discharge branch 9 on the casing 1. The flanges 6, 7 engage machined cylindrical surfaces 6^a, 7^a, respectively, on the interior of the casing 1. 10 denotes the inlet branch.

The casing 1 is split axially with flanged joints and is fitted with bolted-on end covers 11, 12 incorporating stuffing boxes for the shafts 4, 5 which are journaled in outboard bearings carried by brackets 13, 14 unitary with the end covers 11 and 12, respectively.

The shafts 4, 5 are operatively interconnected at one end of the pump by means of gears 15, 16 enclosed in a housing 17 attached to the adjacent bearing bracket 13.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A counter-screw pump of the type referred to incorporating an outer pump casing, and a renewable open-ended double barrel detachably fitted within said casing and accommodating the screw elements.

2. A counter-screw pump as claimed in claim 1, in which the casing is fitted with bolted-on end covers unitary with brackets carrying outboard bearings for the screw-carrying shafts.

3. A counter-screw pump as claimed in claim 1, in which the barrel is supported within the casing on cylindrical flanges unitary with and surrounding the barrel and defining between them a discharge chamber located centrally of the set of screw elements.

4. The herein described and illustrated construction of counter-screw pump.

Dated the 17th day of April, 1935.

R. M. NEILSON,
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Chartered Patent Agents.

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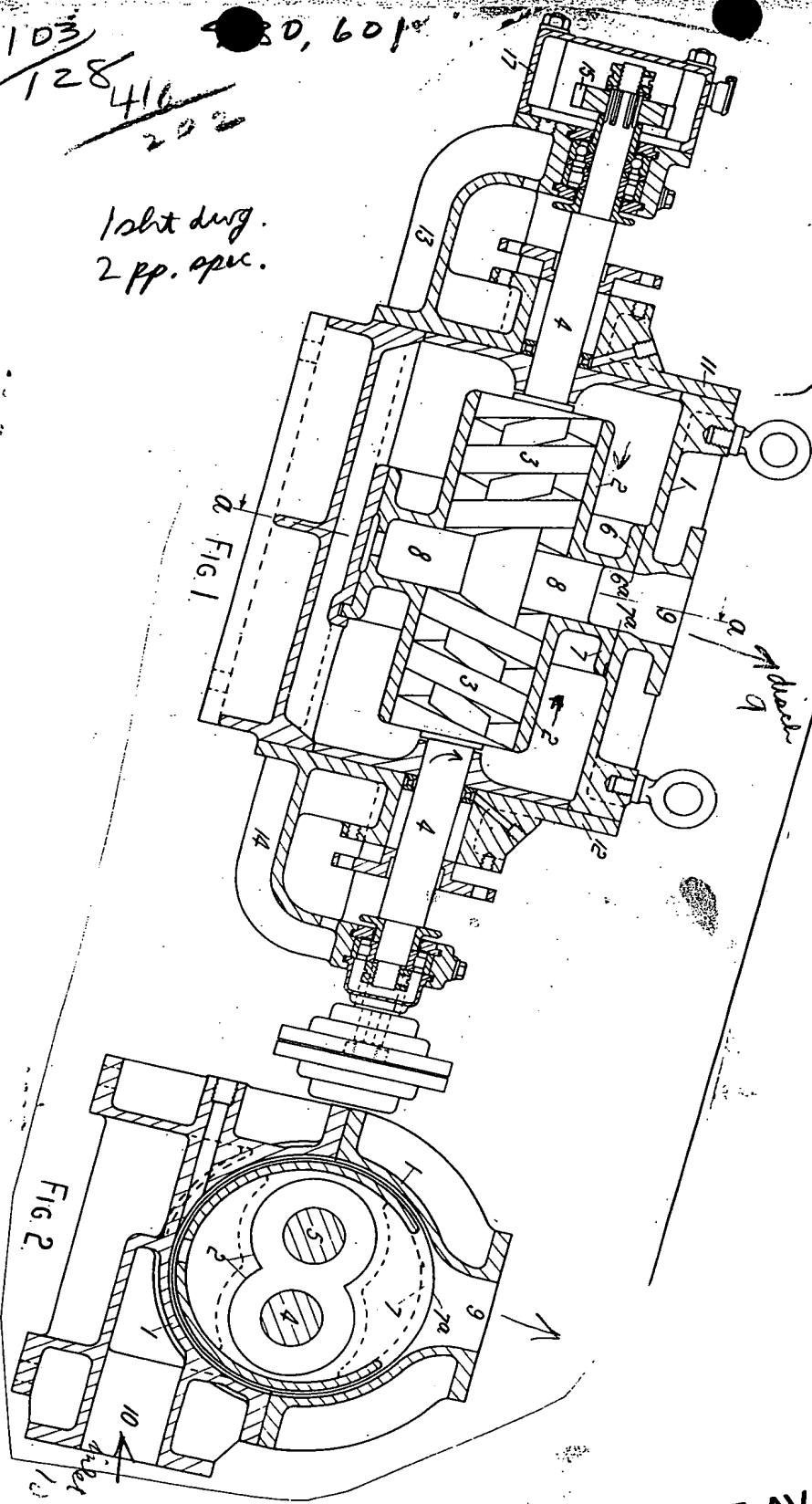
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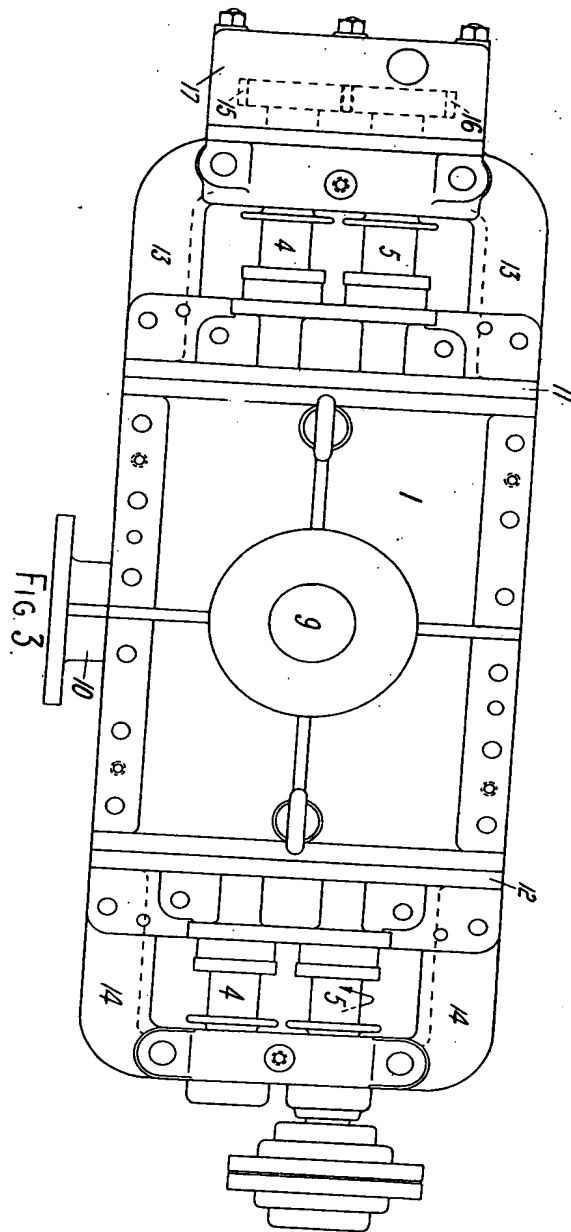
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